AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-19 (Cancelled).

Claim 20 (Original). A copper damascene structure having an aspect ratio of greater than about 3 and a width of less than about 0.275 μm which comprises:

a substrate having a dielectric layer having a via and/or line opening therein;

the via and/or line opening having a liner or barrier layer on sidewalls and bottom surfaces of the via opening;

a metal seed layer on the liner or barrier layer; and

wherein the via and/or line opening is filled with electroplated copper that forms a continuous interface with the liner or barrier layer and being substantially free of internal seams or voids.

Claim 21 (Currently amended). An interconnect structure obtained by the process which comprises:

forming an insulating material on a substrate;

lithographically defining and forming recesses for lines and/or vias in the insulating material in which interconnection conductor material will be deposited;

depositing a barrier layer against copper diffusion;

depositing a current carrying copper seed layer;

depositing the copper conductor by electroplating from a bath containing a dissolved cupric salt wherein the concentration of the cupric salt is at least about 0.4 molar and an acid and wherein the bath has an acidic pH ~~of claim 1~~.

Claims 23-24 (Cancelled).

25.(New) The interconnect structure of claim 21 wherein the concentration of the cupric salt is at least about 0.8 molar.

26. (New) The interconnect structure of claim 21 wherein the cupric salt comprises $CuSO_4$.

27. (New) The interconnect structure of claim 21 wherein the concentration of the acid is a positive amount up to about 0.5 molar.

28. (New) The interconnect structure of claim 21 wherein the concentration of the acid is about 0.1 to about 0.25 molar.

29. (New) The interconnect structure of claim 21wherein the acid is sulfuric acid.

30. (New) The interconnect structure of claim 21 wherein the electroplating bath has a pH of up to about 5.

31. (New) The interconnect structure of claim 21 wherein the electroplating bath has a pH of about 1.

32. (New) The interconnect structure of claim 21 wherein the electroplating bath contains at least one auxiliary additive selected from the group consisting of brightener, leveling agent, ductility enhancer and stress reducer.

33. (New) The interconnect structure of claim 21wherein the electroplating bath is free of complexing agents.

34. (New) The interconnect structure of claim 21 wherein the substrate is coupled to a plating power supply with the current on upon introducing the substrate into the bath.

35. (New) The interconnect structure of claim 34 wherein the initial current of the power supply is lower than the current of the electroplating of copper from the bath onto the substrate.

36. (New) The interconnect structure of claim 35 wherein the initial current is maintained for up to about 30 seconds.

37. (New) The interconnect structure of claim 21 wherein the electroplating is carried out at a current density of about 10 to about 30 ma/cm^2.

38. (New) The interconnect structure of claim 36 wherein the initial current is about 3-4 ma/cm^2.

39. (New) The interconnect structure of claim 21 which further comprises a barrier layer on sidewalls and bottom surfaces of the lines or vias, and a metal seed layer beneath the copper.

40. (New) The interconnect structure of claim 39 wherein the metal seed layer comprises copper.

41. (New) The interconnect structure of claim 21 wherein the vias or lines have dimensions of about 0.275 μm or less and aspect ratios of at least about 3.

42. (New) The interconnect structure of claim 21wherein the copper is planarized or polished.